

WHAT IS CLAIMED IS:

Sub a/ 1. A method of presenting, at a client terminal, a video program stored in a server linked with the client terminal via transmission path of a limited transmission band width wherein each frame of the video program comprises
5 a basic data portion and at least one level of quality supplement data portions, the method comprising the steps, executed by the client terminal, of:

10 in response to one of play control commands from a user, determining a start position in said video program according to said one of said play control command, said play control command including a play, a stop, a head search, a jump forward and a jump backward command;

15 in response to said play command from the user, obtaining and using said basic data portions for playing said video program;

in response to said stop command, obtaining and using said at least one level of quality supplement data portions of a last displayed frame for displaying a quality-enhanced version of said last displayed frame.

2. A method as defined in claim 1, further comprising the step of, in response to one of said head search, said jump forward and said jump backward commands, for obtaining and using said at least one level of quality
20 supplement data portions of a last displayed frame for displaying a quality-enhanced version of said last displayed frame.

3. A method as defined in claim 1, further comprising the steps, executed by said server, of:

25 storing said basic data portions on a tape recording medium; and storing each level of said at least one level of said quality supplement data portions on a different tape recording medium.

4. A method as defined claim 3, further comprising the steps,
executed by said server, of:

rotating all of said recording media synchronously in any of a play, a
5 head search, a jump forward and a jump backward operation; and
in response to a quality supplement data request from said client
terminal, reading said at least one level of quality supplement data portions of
a last displayed frame by rotating said different recording tape media one by
one.

10 5. A method as defined in claim 1, further comprising the steps,
executed by said server, of:

storing said basic data portions on a first tape recording medium; and
storing said at least one level of said quality supplement data
15 portions on a second tape recording medium.

6. A method as defined claim 5, further comprising the steps,
executed by said server, of:

rotating both of said first and second recording media synchronously
20 in any of a play, a head search, a jump forward and a jump backward
operation; and

in response to a quality supplement data request from said client
terminal, reading said at least one level of quality supplement data portions of
a last displayed frame by rotating said second recording tape media.

25 7. A method as defined in claim 1, further comprising the steps,
executed by said server, of:

storing said basic data portions and said at least one level of said quality supplement data portions on two distinct areas of a single recording media, said quality supplement data portions for each frame having a constant data quantity; and

5 in response to a quality supplement data request for a specified frame from said client terminal, reading said quality supplement data portions for said specified frame by means of a rule-of three sum.

10 8. A method as defined in claim 1, further comprising the steps, executed by said server, of:

storing said basic data portions and said at least one level of said quality supplement data portions on two distinct areas of a single recording media;

15 keeping a start address of said quality supplement data portions for each frame;

in response to a quality supplement data request for a specified frame from said client terminal, reading said quality supplement data portions for said specified frame by using said start address of said specified frame.

20 9. A method as defined in claim 1, further comprising the steps, executed by said server, of:

25 storing said basic data portion for each frame and said at least one level of said quality supplement data portions for said frame just following said basic data portion alternately in a successive area on a single recording media;

in response to a request for basic data for said play command, reading only said basic data portions by skipping said quality supplement data

portions; and

after a stop operation responsive to a stop request, reading said at least one level of said quality supplement data portions just following the stopped position.

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10. A method as defined in claim 1, wherein each frame of said video program has been coded according to a coding standard, said video program comprising independent frames that can be decoded alone without a need of other frame data and difference frames that can not be decoded without other frame data, and wherein said using includes passing to a decoder.

11. A method as defined in claim 10, wherein said coding standard is an H. 263 standard and wherein said using includes passing to an H. 263 decoder.

12. A method as defined in claim 10, wherein said coding standard is an MPEG standard and wherein said using includes passing to an MPEG decoder.

13. A method of presenting, at a client terminal, a multimedia program stored in a server wherein the multimedia program includes a video object, each frame of the video object comprising a basic data portion and at least one level of detailed data portions, the method comprising the steps of:

in response to one of play control commands from a user, determining a time count in said multimedia program according to said one of said play control command, said play control command including a play, a stop, a head search, a jump forward and a jump backward command;

in response to one of said head search, said jump forward and said jump backward commands issued during a stop period, determining whether there is a video object to be displayed at said time count in said multimedia program; and

5 in the event there is said video object to be displayed at said time count in said multimedia program, obtaining said at least one level of quality supplement data portions for a first frame to be displayed in a next play operation for displaying a quality-enhanced version of said first frame to be displayed.

10 14. A method as defined in claim 13, further comprising the steps, executed by said client terminal, of:

in response to said stop command, determining whether there is a video object to be displayed at said time count in said multimedia program; and
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in the event there is said video object to be displayed at said time count, obtaining said at least one level of quality supplement data portions for a first frame to be displayed in a next play operation for displaying a quality-enhanced version of said first frame to be displayed.

20 15. A method as defined in claim 13, further comprising the steps, executed by said client terminal, of

in response to said stop command, making a test to see if there is multimedia objects which are other than video objects and each comprise basic
25 data and quality supplement data and which are to be displayed at said time count in said multimedia program; and

for each of said found multimedia objects, obtaining said quality

supplement data for displaying a quality-enhanced version of said each object.

16. A method as defined in claim 13, further comprising the steps,
executed by said client terminal, of

5 in response to said stop command, making a test to see if there is
multimedia objects which are other than video objects and each comprise basic
data and quality supplement data and which are to be displayed later; and
for each of said found multimedia objects, obtaining said basic data in
advance.

10 17. A method as defined in claim 15, further comprising the steps,
executed by said client terminal, of

15 in response to said stop command, making a test to see if there is
multimedia objects which are other than video objects and each comprise basic
data and quality supplement data and which are to be displayed later; and
for each of said found multimedia objects, obtaining said basic data in
advance.

20 18. A terminal for presenting a video program stored in a remote
server connected therewith via band-limited transmission path wherein each
frame of the video program comprises a basic data portion and at least one
level of quality supplement data portions, the terminal comprising;

25 means, responsive to one of play control commands from a user, for
determining a start position in said video program according to said one of
said play control command, said play control command including a play, a stop,
a head search, a jump forward and a jump backward command;

means, responsive to said play command from the user, for obtaining

and using said basic data portions for playing said video program;

means, responsive to said stop command, for obtaining and using said at least one level of quality supplement data portions of a last displayed frame for displaying a quality-enhanced version of said last displayed frame.

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19. A terminal as defined in claim 18, further comprising means, responsive to one of said head search, said jump forward and said jump backward commands, for obtaining and using said at least one level of quality supplement data portions of a last displayed frame for displaying a quality-enhanced version of said last displayed frame.

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20. A terminal of presenting a multimedia program stored in a remote server linked therewith via a band-limited transmission path wherein the multimedia program includes a video object, each frame of the video object comprising a basic data portion and at least one level of detailed data portions, the terminal comprising:

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means, responsive to one of play control commands from a user, for determining a time count in said multimedia program according to said one of said play control command, said play control command including a play, a stop, a head search, a jump forward and a jump backward command;

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means, responsive to one of said head search, said jump forward and said jump backward commands issued during a stop period, for determining whether there is a video object to be displayed at said time count in said multimedia program; and

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means, operative in the event there is said video object to be displayed at said time count in said multimedia program, for obtaining said at least one level of quality supplement data portions for a first frame to be

displayed in a next play operation for displaying a quality-enhanced version of said first frame to be displayed.

21. A terminal as defined in claim 20, further comprising:

5 means, responsive to said stop command, for determining whether there is a video object to be displayed at said time count in said multimedia program; and

means, operative in the event there is said video object to be displayed at said time count, for obtaining said at least one level of quality supplement data portions for a first frame to be displayed in a next play operation for displaying a quality-enhanced version of said first frame to be displayed.

22. A terminal as defined in claim 20, further comprising:

15 means, responsive to said stop command, for finding multimedia objects which are other than video objects and each comprise basic data and quality supplement data and which are to be displayed at said time count in said multimedia program; and

means, operative for each of said found multimedia objects, for
20 obtaining said quality supplement data for displaying a quality-enhanced version of said each object.

23. A terminal as defined in claim 20, further comprising:

means, response to said stop command, for finding multimedia
25 objects which are other than video objects and each comprise basic data and quality supplement data and which are to be displayed later; and

means, operative for each of said found multimedia objects, for

obtaining said basic data in advance.

24. A terminal as defined in claim 22, further comprising:

means, response to said stop command, for finding multimedia
5 objects which are other than video objects and each comprise basic data and
quality supplement data and which are to be displayed later; and

means, operative for each of said found multimedia objects, for
obtaining said basic data in advance.

10 25. A server for serving a video program to client terminals linked via
band-limited transmission path, each frame of the video program comprising a
basic data portion and at least one level of quality supplement data portion,
the server comprising:

15 means for storing said basic data portions on a tape recording
medium; and

means for storing each level of said at least one level of said quality
supplement data portions on a different tape recording medium.

26. A server as defined in claim 25, further comprising:

20 means for rotating all of said recording media synchronously in any of
a play, a head search, a jump forward and a jump backward operation; and

means, responsive to a quality supplement data request from said
client terminal, for reading said at least one level of quality supplement data
portions of a last displayed frame by rotating said different recording tape
25 media one by one.

27. A server for serving a video program to client terminals linked via

band-limited transmission path, each frame of the video program comprising a basic data portion and at least one level of quality supplement data portion, the server comprising:

5 storing said basic data portions on a first tape recording medium; and
storing said at least one level of said quality supplement data portions on a second tape recording medium.

28. A server as defined in claim 27, further comprising:

10 means for rotating both of said first and second recording media synchronously in any of a play, a head search, a jump forward and a jump backward operation; and

15 means, responsive to a quality supplement data request from said client terminal, for reading said at least one level of quality supplement data portions of a last displayed frame by rotating said second recording tape media.

20 29. A server for serving a video program to client terminals linked via band-limited transmission path, each frame of the video program comprising a basic data portion and at least one level of quality supplement data portion, the server comprising:

means for storing said basic data portions and said at least one level of said quality supplement data portions on two distinct areas of a single recording media, said quality supplement data portions for each frame having a constant data quantity; and

25 means, response to a quality supplement data request for a specified frame from said client terminal, for reading said quality supplement data portions for said specified frame by means of a rule-of three sum.

30. A server for serving a video program to client terminals linked via band-limited transmission path, each frame of the video program comprising a basic data portion and at least one level of quality supplement data portion,
5 the server comprising:

means for storing said basic data portions and said at least one level of said quality supplement data portions on two distinct areas of a single recording media;

means for keeping a start address of said quality supplement data portions for each frame;

means, responsive to a quality supplement data request for a specified frame from said client terminal, for reading said quality supplement data portions for said specified frame by using said start address of said specified frame.

31. A server for serving a video program to client terminals linked via band-limited transmission path, each frame of the video program comprising a basic data portion and at least one level of quality supplement data portion,
the server comprising:

means for storing said basic data portion for each frame and said at least one level of said quality supplement data portions for said frame just following said basic data portion alternately in a successive area on a single recording media;

means, responsive to a request for basic data for said play command,
25 for reading only said basic data portions by skipping said quality supplement data portions; and

means, operative after a stop operation responsive to a stop request,

for reading said at least one level of said quality supplement data portions just following the stopped position.

5 32. A terminal as defined in claim 18, wherein each frame of said video program has been coded according to a coding standard, said video program comprising independent frames that can be decoded alone without a need of other frame data and difference frames that can not be decoded without other frame data, and wherein said obtaining and using means each includes means for passing to a decoder.

10 33. A terminal as defined in claim 32, wherein said coding standard is an H. 263 standard and wherein said obtaining and using means each include means for passing to an H. 263 decoder.

15 34. A terminal as defined in claim 32, wherein said coding standard is an MPEG standard and wherein said obtaining and using means each include means for passing to an MPEG decoder.